

Nonindigenous Species (NIS): Why The Concern?

Fisheries

Aquaculture

Ecology Human Health Municipalities Recreation Tourism

Agriculture



<u>Zebra Mussel</u>

- Clogs municipalities
- Smothers other organisms
- Infests approx 50% of U.S. waterways (and spreading... reached California in 2008)
- ~\$1 billion/year

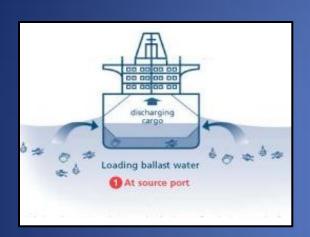
Clubbed Tunicate (Styela clava)

- Fouls /smothers aquaculture (mussels, oysters, scallops, clams)
 - Over \$40 million/year (Canada)



Styela clava, Ciona intestinalis, and Botrylloides violaceus, respectively, on mussel ropes off Prince Edward Island, Canada

Shipping "Vectors" Ballast Water & Vessel Fouling





Shipping Vectors

~ 79% Introductions to N. America

Ballast Water

- Potentially21,100,000 organismsper discharge
- Up to 54% of shipping introductions

Fouling

Up to 70% of shipping introductions





California Marine Invasive Species Program (MISP) Authority & Origins





1999 Ballast Water Management Control for Nonindigenous Species Act

- Foreign ballast water management
- Reporting, record keeping, inspections
- Sunset January 1, 2004

2003 Marine Invasive Species Act (Reauthorization & Expansion)

- Coastal ballast water
- Vessel fouling
- Ballast water performance standards
- Extended sunset date: January 1, 2010

2006 Coastal Ecosystems Protection Act

Deleted sunset date

Marine Invasive Species Program Components

Partner Agencies & Roles

- BOE: Fee assessment and collection
- CDFG: Biological monitoring for NIS in California's coasts and estuaries
- State Water Board:
 Consultation/Advisory role

California State Lands Commission

- ProgramAdministration/Coordination
- Data Management
- Inspections & Enforcement

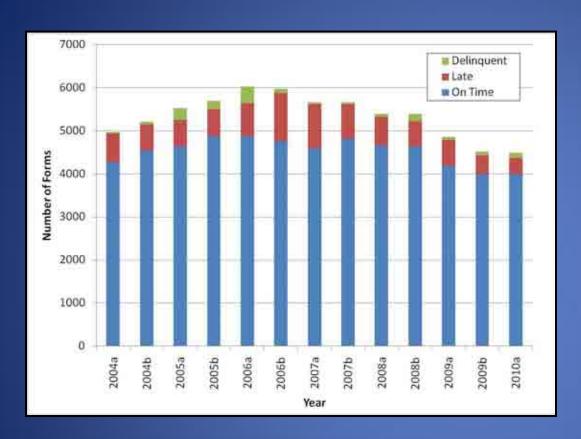








Data Management









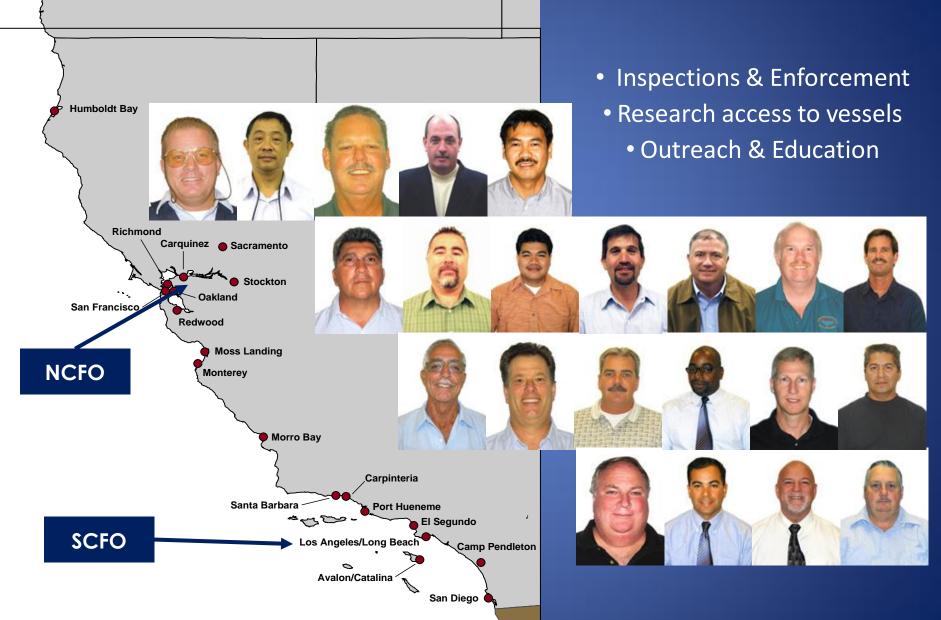






- Data entry (BW + Hull Husbandry)
- ~11K in 2009 (9210 BW + 1722 Hull Husbandry)
 - Form QA/QC
 - Delinquent BW form tracking & notification

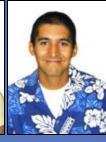
Field Operations



Program Administration











shortest meeting. All in favor say aye. Ayes have it. Meeting over."

- Program implementationInternal & external coordination
- Policy & regulations development
 - Data analysis
- Identify/Coordinate priority research





2011 Biennial Report to the State Legislature

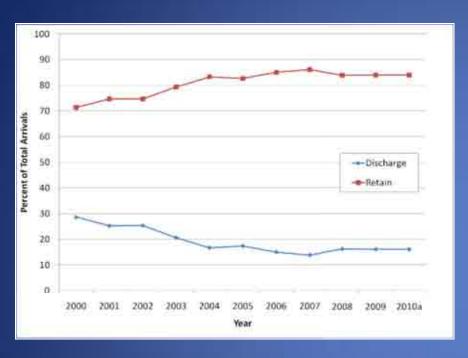
2011 BIENNIAL REPORT ON THE CALIFORNIA MARINE INVASIVE SPECIES PROGRAM

> PRODUCED FOR THE CALIFORNIA STATE LEGISLATURE

By M. Falkner, N. Dobroski, C. Scianni, and L. Takata California State Lands Commission Marine Facilities Division January 2011

- Regulatory Overview: State, Federal
 & International
- MISP Program Activities
- Data Analysis
 - Ballast water discharge
 - Ballast water management compliance
 - Inspections & violations
 - Vessel Fouling
- Funded & collaborative research
- Review of scientific literature
- Recommendations for improvement

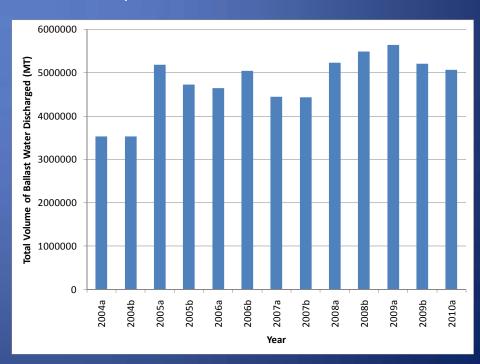
Ballast Water Management & Discharge



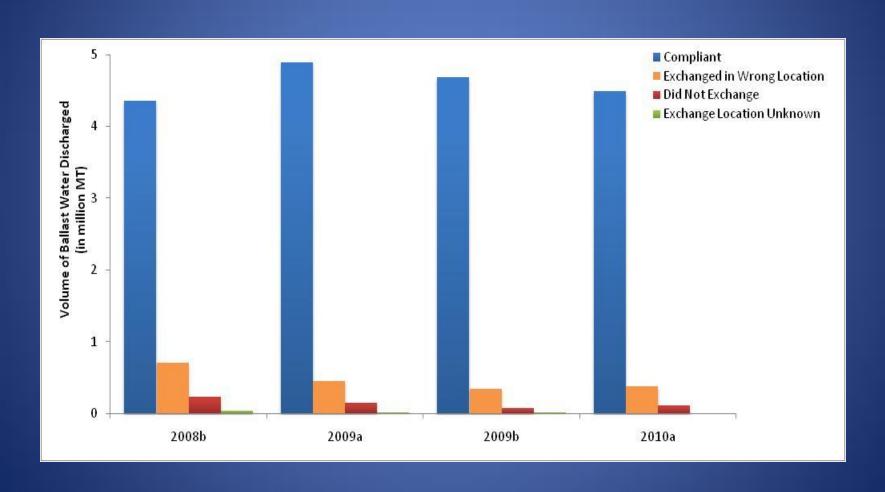


Management Options

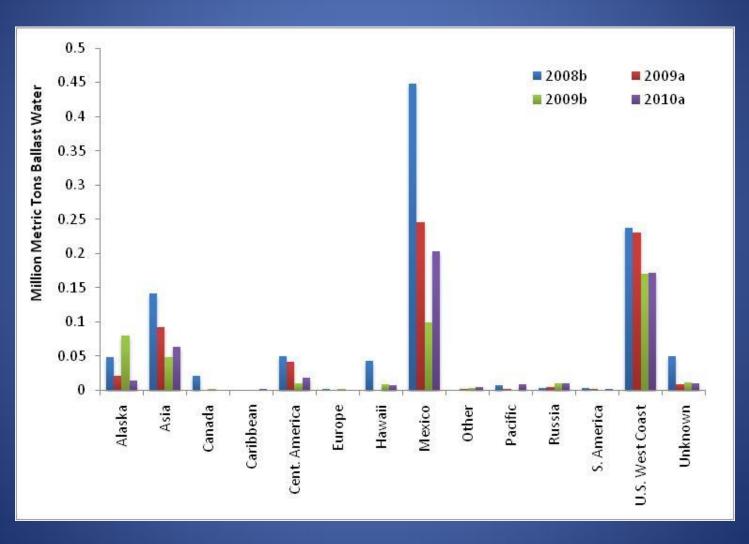
- Retention
- Ballast water exchange
- Discharge to a reception facility (none exist)
- Ballast water treatment (more later)

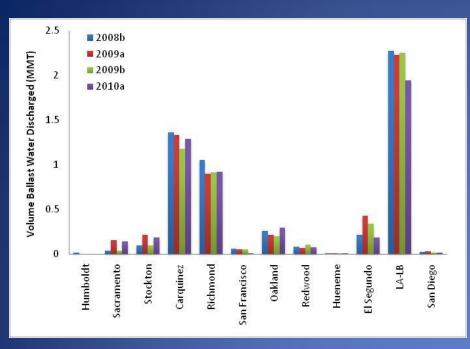


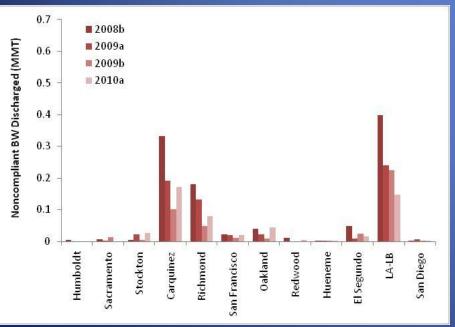
Ballast Water Management Compliance & Noncompliance



Noncompliant Ballast Water: Where is it coming from?







Noncompliant BW: Where is it Discharged?

Data & Report Utility

- Publicly accessible: Inform Legislature, NGOs, shipping community etc.
- Target inspections & outreach improve compliance
- Supplement biological research
 - Inform management decisions

Performance Standards for Ballast Water Discharge

Limitations of Ballast Water Exchange

- Safety
- Deviation & delay
- Variable efficacy (70-98%)

Treatment Technologies

- Potential for better protection
- Eliminate deviations & delays
- Reduce some safety issues

Lack of a target, or "Performance Standard" = Little technology development

2003 MISA directed CSLC to identify
Performance Standards for Ballast Water
Discharge by January 31, 2006





Vessel Fouling

2003 MISA Mandate: Evaluate risk & provide recommendations (2006)

Recommendations to the Legislature (April 2006)

- Address high risk vessels
- Fill biological & hull husbandry information gaps

Revisit - develop potential regulations by 1/1/2012

Assembly Bill 740 (2007)

- "Regular" removal of fouling
- Collection of hull husbandry information
- Regulations by 1/1/2010







Questions?

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California's Marine Invasive Species Program Website:

www.slc.ca.gov
Click "Divisions" Tab
"Marine Facilities Division" link
and

"Marine Invasive Species Program" link